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| 10/798,480 | 03/12/2004 | Takayuki Ishii | Q80462 | 6262 |
| 23373 | 7590 | 08/18/2005 | | |
| SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037 | | | EXAMINER COLILLA, DANIEL JAMES | |
| | | | ART UNIT 2854 | PAPER NUMBER |

DATE MAILED: 08/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,480

Applicant(s)

ISHII ET AL.

Examiner

Daniel J. Colilla

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) ____ is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 9-34 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/12/04, 10/26/04, and 1/27/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. Figures 3, 31A, 31B, 31C and 32 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: "a regulating device" as recited in claims 14-15 cannot be found in the specification.

Claim Objections

3. Claims 1-34 are objected to because of the following informalities:

The claims appear to be a literal translation into English from a foreign document and are have many unusual or incorrect uses of terminology. For example, applicant's use of the term "adsorbing" appears to be incorrect. "Adsorption" is defined as "the adhesion in an extremely

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thin layer of molecules (as of gases, solutes, or liquids) to the surfaces of solid bodies or liquids with which they are in contact.” (Webster’s Ninth New Collegiate Dictionary; Merriam-Webster Inc. 1984). Applicant’s disclosure and claims relates to a sucking unit for attracting a material to a surface, and does not relate to a thin layer of molecules (as of gases, solutes, or liquids).

Additionally, while applicant may be his own lexicographer, the term “fixed material,” used throughout the claims is misleading since the term fixed generally relates to a material that has been dried or cured. Applicant does not appear to intend this meaning.

In claim 3, applicant has not defined what the “scanning” and “subscanning” directions are.

In claim 5, “sucking chambers” has no antecedent basis in the claims. It is noted that this claim is depending from claim 1, not from claim 2 as claim 4 does.

In claim 8, “the main scanning direction” has no antecedent basis in the claims and has not been defined in the claims.

In claim 27, “a decompression chamber” appears to be a double recitation of that which is recited in claim 22.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 15 and 17/15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 15, applicant recites that the regulating device is provided in a position corresponding to the dimple. Due to the terminology antecedent basis problem with claims 14-15, it cannot be determined exactly what “the regulating device” is. The only structure in applicant’s disclosure that appears to support “a regulating device” in claim 14 is the driven roller 352 as mentioned in paragraph [0142] of applicant’s disclosure. However, this structure does not correspond to the position of a dimple. Thus claim 15 does not appear to be supported by the specification.

Due to the nature of the 112, first paragraph, problem with claims 15 and 17/15, prior art could not be accurately applied at this time. Once the 112 problem has been overcome any relevant prior art will be applied.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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7. Claims 1-4, 6, 9/1-9/4, 9/6-9/8, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Teumer et al. (US 6,179,285).

With respect to claims 1 and 10, Teumer disclose a fixed material transportation apparatus including a sucking unit which includes a fixed material transportation surface 112 with a plurality of sucking holes 114,116, a decompression chamber 118 in communication with the sucking holes 114,116 and a sucking device 122 for sucking air out of the decompression chamber 118 as shown in Figures 1 and 2 of Teumer. Further disclosed is a delivering device 102,103 for feeding a material onto the transportation surface 112 from an upstream side of the sucking unit to a downstream side. Figure 2 of Teumer et al. shows that each of the sucking holes 114,116 is a through hole section 114 communicating with the decompression chamber 118 and also includes a sucking chamber 116 having a larger area of a sucking surface opposed to the material than a sectional area of the through holes section 114 as shown in Figure 1 of Teumer.

With respect to claim 2, each of the sucking chambers 116 includes a concave portion formed in the transportation surface 112 as shown in Figure 2 of Teumer, and the sucking chambers 116 are mutually partitioned by partition walls as shown below in the Figures taken from Figures 1 and 2 of Teumer:

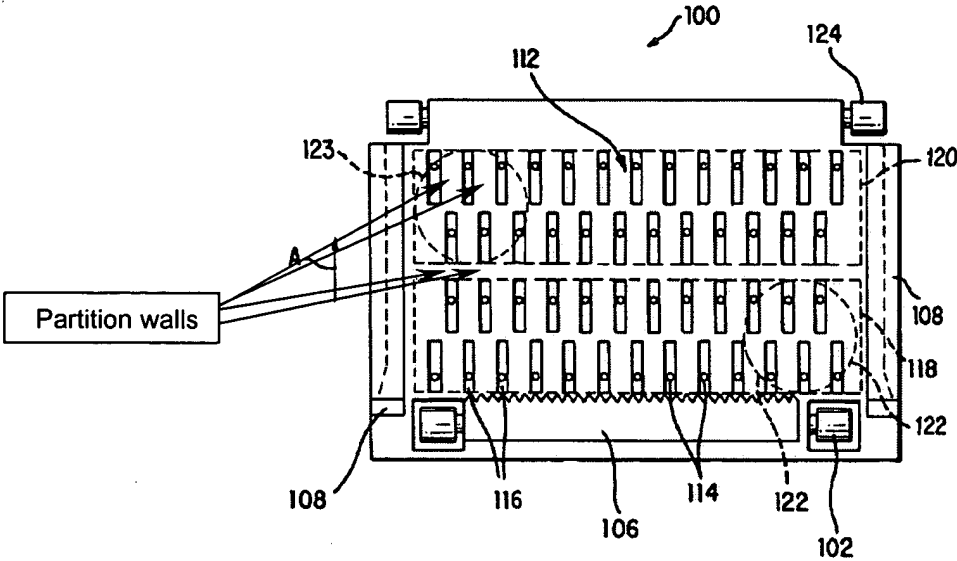


FIG. 1

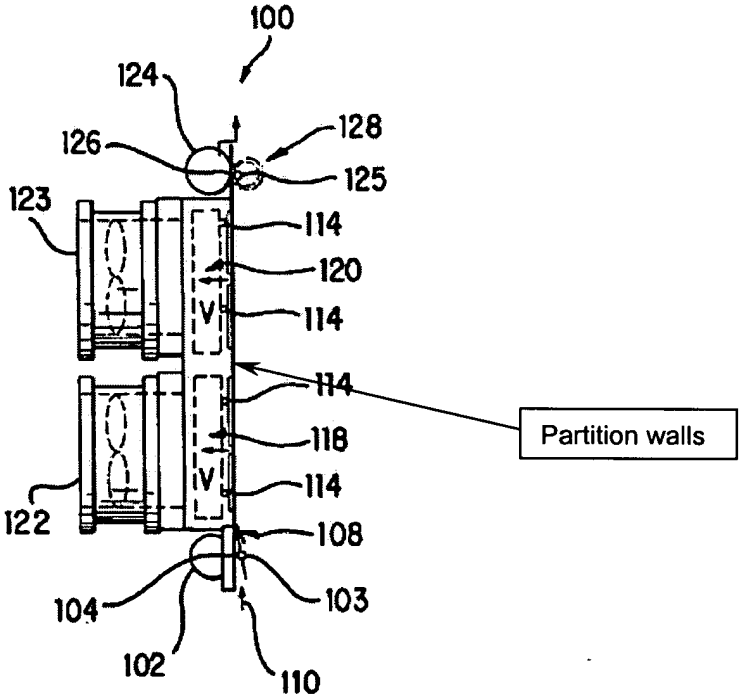


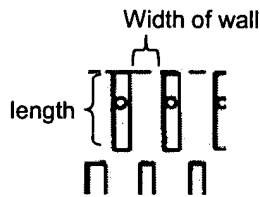
FIG. 2

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With respect to claim 3, referring to the above Figure taken from Figure 1 of Teumer, the upper two arrows point to partition walls formed in the main scanning direction the lowest air points to walls formed in the subscanning direction.

With respect to claim 4, each of the sucking chambers 116 has a sucking surface formed by an almost rectangular concave portion. It is noted that no manufacturing process will ever achieve a perfect rectangle and therefore the sucking chamber 116 disclosed by Teumer can be considered "almost" rectangular.

With respect to claim 6, as shown below (Figure taken from Figure 1 of Teumer), the width of the top of the partition wall is smaller than a length of the sucking chamber 116.



With respect to claims 9/1-9/4 and 9/6-9/8, Teumer discloses that the fixed material transportation apparatus is in a liquid fixing apparatus (printer) as shown in Figure 3 of Teumer.

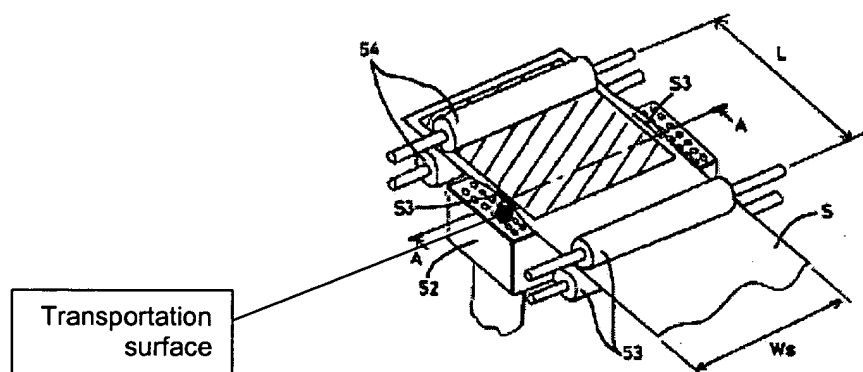
8. Claims 1, 5, 9/5, 10, 11, 12, 13, 14, 16, 17/11, 17/12, 17/13, 17/14 and 17/16 are rejected under 35 U.S.C. 102(b) as being anticipated by Nomura (JP 9-220837).

With respect to claims 1 and 10, Nomura discloses a fixed material transportation apparatus including a sucking unit which includes a fixed material transportation surface with a plurality of sucking holes, a decompression chamber 52a in communication with the sucking holes sucking device 19 (see Figure 11 of Nomura) for sucking air out of the decompression chamber 52a as shown in Figures 13 and 14 of Nomura and shown below in the Figures taken

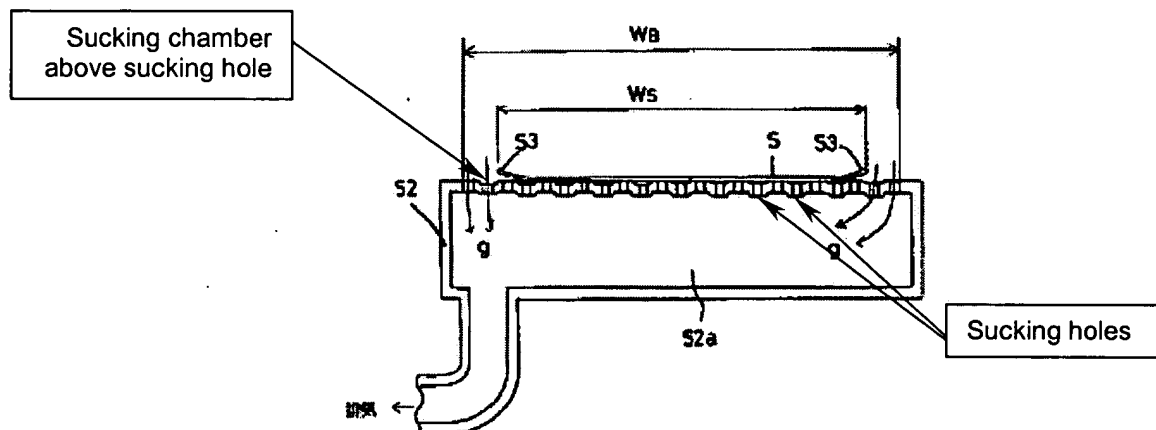
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from Figures 13 and 14 of Nomura. Further disclosed is a delivering device 53 (Figure 13 of Nomura) for feeding a material onto the transportation surface from an upstream side of the sucking unit to a downstream side. Figure 14 of Nomura et al. shows that each of the sucking holes is a through hole section communicating with the decompression chamber 52a and also includes a sucking chamber having a larger area of a sucking surface opposed to the material than a sectional area of the through holes section as shown in Figure 14 of Nomura.

【図13】



【図14】



With respect to claim 5, as shown above and in Figures 13-14 of Nomura, the sucking chamber has a sucking surface formed by an almost circular concave portion.

With respect to claim 9/5, Nomura discloses that the fixed material transportation apparatus is in a liquid fixing apparatus (printer) as shown in Figure 11 of Nomura.

With respect to claim 11, Nomura discloses a fixed material transportation apparatus including a dimple (the sucking chambers disclosed by Nomura can be considered dimples). The suction sucking the fixed material S down so that it does not wrinkle (see paragraphs [003]-[004] of the machine translation of Nomura).

With respect to claim 12, the dimples disclosed by Nomura are formed for the purpose of preventing the sheet S touching the recording head 55 due to elongation (extension) of the sheet S as mentioned in paragraphs [003]-[004] of the machine translation of Nomura. Since this is the purpose, it can be said that the dimple is formed corresponding to an extension rate of the material S.

With respect to claim 13, similarly, the elongation of the sheet S creates a wrinkle in the sheet such that it might touch the recording head 55. The dimples are formed to prevent this from happening. Thus it can be said that the dimples are formed corresponding to a shape of the wrinkle generated in the fixed material.

With respect to claim 14, to the extent that this claim can be understood in view of the antecedent basis problem mentioned above in the objection to the specification, it appears that Nomura meets the claimed limitations. The only structure in applicant's disclosure that appeared to support "a regulating device" in claim 14 is the driven roller 352 as mentioned in paragraph [0142] of applicant's disclosure. Nomura discloses a regulating device (upper roller 53) as shown

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in Figure 13 of Nomura. The regulating device 53 is located upstream of the transportation surface and with assistance from rollers 54 would limit the amount of wrinkling that could occur in the sheet S.

With respect to claim 16, Nomura discloses a sucking unit which includes a fixed material transportation surface with a plurality of sucking holes, a decompression chamber 52a in communication with the sucking holes sucking device 19 (see Figure 11 of Nomura) for sucking air out of the decompression chamber 52a as shown in Figures 13 and 14 of Nomura and shown above in the Figures taken from Figures 13 and 14 of Nomura. Figure 14 of Nomura et al. shows that each of the sucking holes is a through hole section communicating with the decompression chamber 52a and also includes a sucking chamber having a larger area of a sucking surface opposed to the material than a sectional area of the through holes section as shown in Figure 14 of Nomura. The sucking chambers function as the dimples.

With respect to claims 17/11, 17/12, 17/13, 17/14 and 17/16, Nomura discloses that the fixed material transportation apparatus is in a liquid fixing apparatus (printer) as shown in Figure 11 of Nomura.

9. Claims 18 and 21/18 are rejected under 35 U.S.C. 102(b) as being anticipated by Wotton et al. (US 6,315,404).

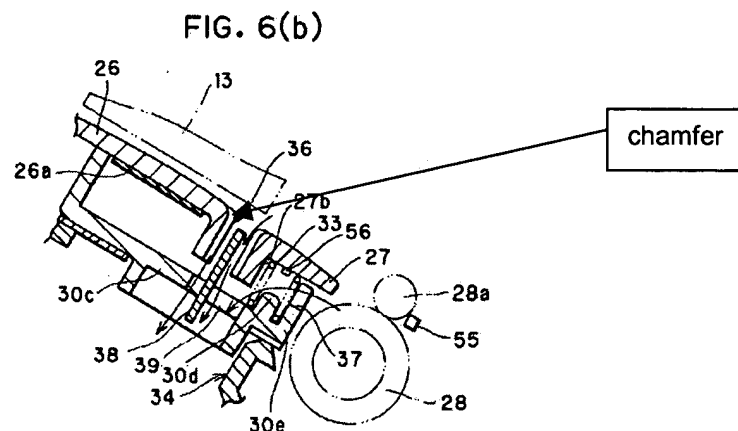
With respect to claim 18, Wotton et al. discloses a fixed material transportation apparatus including a transportation surface 204 which has dimples 203 that change in depth in a transportation direction of a fixed material as shown in Figures 2-3 of Wotton et al. The dimples 203 change in depth radially in all directions as shown in Figure 2 of Wotton et al.

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With respect to claim 21/18, Wotton et al. discloses a liquid fixing apparatus.

10. Claims 29, 30, 32 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al. (US 6,196,672).

With respect to claim 29, Ito discloses a fixed material transportation apparatus including a transportation surface 26 on which a fixed material is sucked and transported. A chamber is provided at an air inlet portion of a sucking hole 36 formed in the surface 26 as shown below in the Figure taken from Figure 6(b) of Ito et al.:



With respect to claim 30, the chamfered surface is a rounded surface.

With respect to claim 32, interpreting the term "taper surface" broadly, the chamfer can also be considered a taper surface.

With respect to claim 34, Ito et al. discloses a liquid fixing apparatus.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 19-20, 21/19 and 21/20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura (JP 9-220837) in view of Wotton et al. (US 6,315,404).

With respect to claim 19, Nomura discloses the claimed apparatus except that it is not known to the examiner if the dimples have a depth that changes in a transportation direction of the fixed material. Nomura discloses the structure as mentioned in the above prior art rejection of claim 1. Wotton et al. teaches the dimples with a depth that changes in the transportation direction of the fixed material as mentioned above with respect to claim 18. It would have been obvious to combine the teaching of Wotton et al. with the apparatus disclosed by Nomura for the advantage of the heaters for reducing cockle (Wotton et al., col. 3, lines 19-30).

With respect to claim 20, Figure 2 of Wotton et al. shows that the sucking chamber is formed such that the depth is gradually increased from an edge on an upstream side to the sucking hole.

With respect to claims 21/19 and 21/20, Wotton et al. discloses a liquid fixing apparatus.

13. Claims 22-27 and 28/22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nomura (JP 9-220837) in view of Kanemura (JP 07-009712).

With respect to claim 22, Nomura discloses the claimed fixed material transportation apparatus except for the hard porous material. Nomura discloses the claimed apparatus as mentioned in the above prior art rejection of claim 1. Kanemura teaches a platen 10 that can be made of a porous, ceramic material (ceramic being a hard material). It would have been obvious to combine the teaching of Kanemura with the apparatus disclosed by Nomura for the advantage of a platen that absorbs ink that is ejected outside the perimeter of the printing material and prevents the soiling of subsequently fed printing materials.

With respect to claim 23, Kanemura teaches providing a hard porous material 10 at locations corresponding to widths of various papers as shown in Figure 5(a) of Kanemura.

With respect to claim 24, Figures 3-6 of Kanemura teaches providing the hard porous material 10 in a lateral direction.

With respect to claim 25, Kanemura teaches a slide 30 for removing the hard porous material 10 (see paragraph [0028] of the machine translation of Kanemura).

With respect to claim 26, Kanemura teaches providing an ink absorbing material 31 to the underside of the hard porous material 10 as shown in Figure 6(b) of Kanemura (see paragraph [0032] of the machine translation of Kanemura).

With respect to claim 27, Nomura discloses a decompression chamber 52a.

With respect to claim 28/22-27, both Nomura and Kanemura disclose a liquid fixing apparatus comprising the fixed material transportation apparatus.

14. Claims 31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. (US 6,196,672).

With respect to claims 31 and 33, Ito et al. discloses the claimed apparatus except for that the dimensions of the chamfered surface are not known to the examiner. However, the optimal dimensions of the surface would have readily been obvious to one of ordinary skill in the art through routine experimentation. It has been held that "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); see also Peterson, 315 F.3d at 1330, 65 USPQ2d at 1382 ("The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages.");< ** In re Hoeschele, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969).

Allowable Subject Matter

15. Claims 7-8 are objected to as being dependent upon a rejected base claim, and rejected for the above mentioned informalities, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if rewritten to overcome the above mentioned informalities.

16. The following is a statement of reasons for the indication of allowable subject matter:

Claim 7 has been indicated as containing allowable subject matter primarily for the top of the partition walls being formed linearly with an arc of approximately zero.

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Claim 8 has been indicated as containing allowable subject matter primarily for the top of the partition walls in at least the main scanning direction being formed linearly with an area of approximately zero.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Colilla whose telephone number is 571-272-2157. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Hirshfeld can be reached on 571-272-2168. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 8, 2005


Daniel J. Colilla
Primary Examiner
Art Unit 2854